AMENDMENTS

In the Claims

Marked Up Version Of The Pending Claims under 37 C.F.R. 1.121(c)(1)(ii): In accordance with 37 C.F.R. 1.121(c)(1)(ii), the Applicant submits the following marked up version only for claims being changed by the current amendment, wherein the markings are shown by strikethrough (for deleted matter) and/or underlining (for added matter):

1. (currently amended)A ~~communication~~ system[[,]] comprising:

~~a digital data input source providing data bits/samples;~~

~~a modulator for modulating the digital data input source;~~

~~an encoder for encoding the modulated digital data input source;~~

~~a decoder for decoding a received encoded signal;~~

~~a demodulator for demodulating the decoded received encoded signal; and~~

a pulse width discriminator operable to couple to a data transmission channel, receive a signal from the transmission channel, and detect the signal at a correct sub-slot location~~link for coupling the encoder and the decoder~~,

~~wherein the communication system is operable to transmit mass quantities of digital data through the data transmission link at high-rates of speed by way of modulating and encoding the data bits/samples,~~

wherein the signal has~~encoder adapts the data bits/samples by separating the data bits/samples into~~ forward and conjugate pulse positions~~ over a transmission channel~~;

a clock operably coupled to the pulse width discriminator;

a demultplexer operably coupled to the pulse width discriminator and operable to de-multiplex the pulse stream in the signal into corresponding sub-slot positions;

a pulse positioner operably coupled to the demuliplexer;

a conjugate counter operably coupled to the pulse positioner and operbly coupled to the clock;

a forward counter operably coupled to the pulse positioner and the clock;

a common slot pulse sorter operably coupled to the conjugate counter and the forward counter;

a data conjugator operably coupled to the conjugate counter;

a data combiner operably coupled to the data conjugator and the forward counter;

a digital-to-analog converter operably coupled to the data combiner,

wherein the system reconstructs an original signal sample from the forward and conjugate pulse positions.

2. (currently amended)The system according to claim 1, wherein the forward and conjugate pulse positions are generated by a mono_[[-]]shot pulse generator.

3. (currently amended)The system according to claim 1, wherein the pulse positioner further comprises:

a pulse positioner operably coupled to the demuliplexer through three lines;~~the modulator split the data bits/samples into a plurality of data bit/sample sets~~.

4. (currently amended)The system according to claim 1, further comprising:

a low-pass filter operably coupled to the digital-to-analog converter to generate an analog base band signal from the digital-to-analog converter~~analog to digital converter for convert an analog signal to the data bits/samples~~.

5. (currently amended)The system according to claim 1, wherein the system~~decoder~~ adapts the~~an received encoded~~ signal between the forward and conjugate pulses in the ~~encoded~~ signal.

6. (currently amended)The system according to claim 1, wherein the signal has~~decoder uses~~ a thin pulse for forward pulse position coding and a relatively thicker pulse for conjugate pulse position coding.

7. (currently amended)The system according to claim 1, wherein the system~~demodulator~~ recombines the forward and conjugate pulse positions into a digital output.

8. (currently amended)A method for transmitting mass quantities of digital data through a data transmission channel[[link]] at high [[-]]rates of speed in a communication system comprising~~including~~:

splitting input digital data bits/samples into a plurality of data bit/sample sets;

encoding forward and conjugate pulse positions over the[[a]] transmission channel,;

~~decoding the forward and conjugate pulse positions to discriminate between the forward and conjugate pulses in a signal; and~~

~~demodulating the data to recombine the forward and conjugate pulses into digital output~~;

wherein the encoding includes adapting the plurality of data bit/sample sets by separating the plurality of data bit/sample sets into the forward and conjugate pulse positions over the transmission channel,

wherein a first k-bit representative pulse is positioned in a forward manner and a second k-bit pulse is positioned on a conjugate pulse location within the same space,

wherein a thin pulse is used for forward pulse position coding and a relatively thicker pulse is used for conjugate pulse position coding.

9. (currently amended)The method according to claim 8, wherein the thin pulse is generated by a forward time position converter and the thicker pulse is generated by a conjugate time position converter.

10. (previously presented)The method according to claim 8, wherein the forward and conjugate pulse positions are generated by a mono-shot pulse generator.

11. (currently amended)A method~~communication system in a data transmission link,~~ comprising:

generating a trailing-edge digital pulse-width modulated signal from a digital input signal by comparing a sampled signal against a negative slope linear staircase signal occupying the same intra sample time span;

generating a leading-edge digital pulse-width modulated signal, wherein a reference staircase is of positive slope having the same number of steps and occupying the same intra sample time frame;

generating a position indicating pulse for each modulated edge of the digital pulse-width modulated signals;

multiplexing the positions into forward and conjugate positioned pulses of different pulse widths;

detecting equivalence between the input signal and a negative slope staircase signal followed by a negative edge triggered mono-stable, to produce a linear voltage-to-pulse position conversion characteristic; and

generating conjugated positioned pulses by generating a leading edge digital pulse width modulated signal followed by a positive edge triggered mono-stable that differentiates modulated edges of leading edge digital pulse-width modulated signals.

~~a digital data input source providing data bits/samples;~~

~~a modulator for modulating the data bits/samples from the digital data input source;~~

~~an encoder for encoding the modulated data bits/samples;~~

~~a decoder for decoding an encoded signal;~~

~~a demodulator for demodulating the decoded encoded signal; and~~

~~a data transmission channel for coupling the encoder and the decoder,~~

~~wherein the communication system transmits mass quantities of digital data through the data transmission link at high rates of speed by way of modulating and encoding the data bits/samples,~~

~~wherein the encoder separates the modulated digital data input source into distinct positions over the transmission channel~~.

12. (currently amended)The method~~system~~ according to claim 11, wherein a thin pulse is used for forward pulse position coding and a relatively thicker pulse is used for conjugate pulse position coding.

13. (currently amended)The method~~system~~ according to claim 11, wherein forward and conjugate pulses are generated by a mono-shot pulse generator.

14. (currently amended)The method~~system~~ according to claim 11, wherein the generating positive slope staircase signals for leading edge digital pulse-width modulated signal further comprises:

charging a capacitor with a constant current source through a programmable timing generator controlled high frequency switch~~data splitter splits the data bits/samples into a plurality of data bit/sample sets~~.

15. (currently amended)The methodsystem according to claim 11, wherein the forward and conjugate pulse is co-located and the method further comprises:

generating a third pulse width, which is different and larger, compared to the forward and conjugate pulse code widthsencoder adapts the data bits/samples by separating the data bits/samples into forward and conjugate pulse positions over the transmission channel.

16. (currently amended)The methodsystem according to claim 11, wherein an[[the]] encoder is operable to adapt[[s]] the digital pulse-width modulated signalmodulated data bits/samples between the forward and conjugate pulse positions in the encoded signal.

17. (currently amended)The methodsystem according to claim 16[[11]], wherein the encoder is operable to use[[s]] a thin pulse for forward pulse position coding and a relatively thicker pulse for conjugate pulse position coding.

18. (currently amended)The methodsystem according to claim 11, wherein the forward and conjugate pulses are recombined into digital output.

19. (currently amended)The methodsystem according to claim 11, the system further comprising:

an analog to digital converter for converting an analog input signal into the digital input signaldata bits/samples.

20. (currently amended)The method~~system~~ according to claim 19~~, the system~~ further comprising:

~~a data splitter for~~ splitting the digital input signal into a plurality of data bit/sample sets.